REMARKS

Favorable reconsideration, reexamination, and allowance of the present patent application are respectfully requested in view of the foregoing amendments and the following remarks. The foregoing amendments have full support in the specification, at least, at paragraphs page 1, lines 4-8, and page 7, line 22 - page 8, line 2. No new matter is entered.

Amendments

Claims 77 and 81-84 are amended. New claim 85 is added.

Rejection under 35 U.S.C. § 112, first paragraph

In the Office Action, beginning at page 4, Claims 77-80 were rejected under 35 U.S.C. § 112, first paragraph, as reciting subject matters that allegedly failing to comply with the scope of enablement requirement. Applicant respectfully requests reconsideration of this rejection.

The claims have been amended as suggested by the Examiner in a series of phone conversations in which the Examiner was proposing Examiner's Amendments in this application and its child. The applications did not become allowable due to the discovery of allegedly potential prior art. However, the amendments proposed by the Examiner were deemed sufficient to overcome all the rejections under 35 U.S.C. 112. As the reason for the application not moving forward to allowance was due to potential prior art, these amendments should still be sufficient to remove the rejections under 35 U.S.C. 112.

Specifically, the claims now recite a specific group of amino acids which are produced. As the Examiner suggested these claim amendments in February 2009 in an attempt to allow the application, these amendments are sufficient to overcome this rejection.

For at least the foregoing reasons, Applicant respectfully submits that Claims 77-80 fully comply with 35 U.S.C. § 112, first paragraph, and therefore respectfully requests withdrawal of the rejection thereof under 35 U.S.C. § 112.

Rejection under 35 U.S.C. § 103(a)

In the Office Action, beginning at page 7, Claims 77-84 were rejected under 35 U.S.C. § 103(a), as reciting subject matters that allegedly are obvious, and therefore allegedly unpatentable, over the disclosure of Debabov *et al.* (hereinafter "Debabov") in view of the disclosure of Vrlijc *et al.* (hereinafter "Vrlijc"), the Daniels Database Accession Number P27846 (hereinafter "P27846"), Daniels *et al.* (hereinafter the Daniels Science reference"), and Kobayashi *et al.* (hereinafter "Kobayashi") and as evidenced by Zakataeva *et al* (hereinafter "Zakataeva"). Applicant respectfully requests reconsideration of this rejection.

Debabov is cited for allegedly teaching using an *E.coli* bacterium to produce L-threonine by transforming the bacterium with an expression vector which includes all of the genes of the threonine operon. Vrlijc is cited for allegedly teaching methods for modifying bacteria to improve production of amino acids, including improving export efficiency of amino acids by increasing amino acid exporters.

The Examiner refers to a Daniels reference from the journal Science which the Examiner states was cited in an IDS of January 26, 2007. First, there was not an IDS filed on this date. Applicants cited a reference of Daniels in their IDS of May 16, 2005, but this was database printout, and not an article from the journal Science. Applicants have filed other IDSs in this application, but none contain a reference to a Daniels article from the journal Science. Clarification is requested.

The Examiner also refers to the Database Accession Number P27846, which was cited in Applicant's IDS of October 15, 2008, for the teaching of the *E. coli recQ-pldB* intergenic region which is flanked by *pldA and pldB.*

Kobayashi is cited for teaching an *E. coli* host cell transformed with vector pAB104, which comprises a DNA segment which includes the region between and including genes pldA and pldB (see p. 1012, figure 4 and p. 1014, figure 6). This region includes the DNA of SEQ ID NO: 3, which encodes the amino acid sequence of SEQ ID NO: 4. Applicants have agreed with this interpretation of this reference.

Debabov is a generic teaching that amino acids can be produced from bacteria, and ways for improving such production. This technology has been around for years, and such production has proved to be industrially useful. However, this reference fails to

teach the sequence of SEQ ID NO: 3, which is obviously a critical limitation of the claims. In fact, this reference fails to teach anything about the claimed sequence, either its existence, or usefulness in producing amino acids upon expression. Similarly, Vrlijc is a fairly generic reference which also fails to teach the sequence of SEQ ID NO: 3 or any suggestion of this sequence, its encoded protein, or said protein's usefulness as an exporter or that it has any role in the production of amino acids. Although Vrlijc generally discusses the usefulness of amino acid exporters, this reference fails to identify the claimed encoded sequence as being useful as an amino acid exporter.

The Examiner states that the Daniels P27846 reference refers to a 'threonine efflux protein' in the characterization of the depicted sequence, however, this is based on homology of a segment of the sequence, and it is merely 'hypothetical' that a protein would be expressed from said sequence. There is no suggestion that upon expression of the entire sequence, or the portion which is claimed in the instant application, would lead to increased L-threonine efflux. The same is true for the Kobayashi reference. In particular, neither of these references would suggest nor provide a reason to one of ordinary skill in the art that a functional protein can be expressed from these sequences which would aid in increasing production of threonine, or any amino acid, in a bacterial cell. Simply stated, there is no reason to think that expression the sequences taught by either Daniels or Kobayashi would lead to an improved method of producing the claimed amino acids since there is no suggestion as to the definitive function of the encoded functional protein. In fact, there is no evidence that a functional protein would even result from expression of the cited sequences since there is no teaching or suggestion of actual expression of the prior art sequences.

Furthermore, Kobayashi does not teach any method steps for producing an amino acid, and specifically does not teach steps B) and C) of the claimed method. Specifically, Kobayashi does not teach production of an L-amino acid, and particularly that transforming the bacteria with the DNA which encodes the protein of SEQ ID NO: 4 will result in production of an L-amino acid.

Zakataeva is cited for teaching the *rhtC* gene, which is a homolog of the claimed SEQ ID NO: 3, and its involvement in threonine efflux. However, again, there is no suggestion of this gene's, or the encoded protein's, involvement in the increased

production of amino acids, including L-threonine. In fact, there is no teaching of the production of L-amino acids using the *rhtC* gene, nor that such production can be increased by increasing expression of this gene. Therefore, there is no motivation or reason to combine this reference with the other cited references. It certainly could not have been obvious to use the gene of Zakataeva in an effort to increase amino acid production since there is no suggestion or teaching of this function of the specific claimed sequence.

Furthermore, there is no reason or motivation to combine these references, since there is no evidence that the sequence taught by Daniels or Kobayashi would function if expressed, nor what its function would be. Neither Debabov nor Vrlijc suggest or teach the claimed sequence, and neither Daniels nor Kobayashi nor Zakataeva knew or understood the function of the claimed sequence. Therefore, there is no motivation or reason to combine these references. It certainly could not have been obvious to use the sequence of Daniels or Kobayashi in an effort to increase amino acid production since there is no suggestion or teaching of this function of the specific claimed sequence.

For at least the foregoing reasons, Applicant respectfully submits that the subject matters of Claims 77-84, each taken as a whole, would not have been obvious to one of ordinary skill in the art at the time of Applicant's invention, are therefore not unpatentable under 35 U.S.C. § 103(a), and therefore respectfully requests withdrawal of the rejection thereof under 35 U.S.C. § 103(a).

Conclusion

For at least the foregoing reasons, Applicant respectfully submits that the present patent application is in condition for allowance. An early indication of the allowability of the present patent application is therefore respectfully solicited.

If Examiner Steadman believes that a telephone conference with the undersigned would expedite passage of the present patent application to issue, he is invited to call on the number below.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and the Commissioner is hereby authorized to charge fees necessitated by this paper, and to credit all refunds and overpayments, to our Deposit Account 50-2821.

Respectfully submitted,

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